WHAT IS CLAIMED IS:

1. An access point in an optical fiber-based wireless network, the access point comprising:

an antenna for transceiving signals and receiving a communication requirement signal transmitted from an external device; and

a semiconductor optical amplifier for selectively performing an optical detection function of converting optical signals, which have been received through a first optical fiber, into electrical signals and sending the converted electrical signals through the antenna, and an optical modulation function of converting signals, which have been received by the antenna , into optical signals and transmitting the converted optical signals through second optical fiber, according to the communication requirement signals.

2. The access point as claimed in claim 1, wherein the communication requirement signal includes at least one of reception requirement signal in order to receive corresponding data and transmission requirement signals transmitted by the external device in order to transmit corresponding data.

3. The access point as claimed in claim 2, wherein the semiconductor optical amplifier performs the optical modulation function when the transmission requirement signal is received, and the semiconductor optical amplifier performs the optical detection function when the transmission requirement signal is not received.

4. The access point as claimed in claim 2, wherein the semiconductor optical amplifier performs the optical detection function when the reception requirement signal is received, and the semiconductor optical amplifier performs the optical modulation function when the transmission requirement signal is received.

5. The access point as claimed in claim 2, further comprising:

a switch for selectively outputting a signal for providing corresponding command according to the communication requirement signal received by the antenna;

a bias control unit for selectively outputting bias current with variable intensity according to whether an output of the signal from the switch exists or not, on the basis of a predetermined threshold current; and

a bias control unit for outputting signals transmitted from the semiconductor optical amplifier to the antenna when a bias current, which is smaller than the predetermined threshold current, is output from the bias control unit, and for outputting signals received by the antenna to the semiconductor optical amplifier when a bias current, which is larger than the predetermined threshold current, is outputted from the bias control unit.

6. The access point as claimed in claim 5, wherein the switch does not output the signal when the communication requirement signal is the reception requirement signal, and the switch outputs the signal when the communication requirement signal is the transmission requirement signal, and

wherein the bias control unit outputs the bias current, which is smaller than the predetermined threshold current, when the signal is not output from the switch, and the bias control unit outputs the bias current, which is larger than the predetermined threshold current, when the signal is output from the switch.

7. The access point as claimed in claim 3, wherein a reverse bias is applied to the semiconductor optical amplifier in order to enable an optical detection function to be performed.

8. An optical fiber-based wireless network system, the system comprising:

a central station including an optical modulation unit for converting ultra-wideband signals to be transmitted into optical signals and an optical demodulation unit for converting received optical signals received into electrical signals;

a first optical fiber for transmitting optical signals modulated by the optical modulation unit to an outside, wherein the first optical fiber is connected to the optical modulation unit;

a second optical fiber for transmitting optical signals to the optical demodulation unit, wherein the second optical fiber is connected to the optical demodulation unit; and

an access point including a switch for receiving communication requirement signals transmitted from an external device and a semiconductor optical amplifier for selectively performing an optical detection function of converting optical signals, which have been transmitted through the first optical fiber, into electrical signals and sending the

converted electrical signals through an antenna, and an optical modulation function of converting signals, which have been received by the antenna, into optical signals and transmitting the converted optical signals to the central station through the second optical fiber, according to the communication requirement signals.

9. The system as claimed in claim 8, wherein the communication requirement signals include at least one of a reception requirement signal transmitted by the external device in order to receive corresponding data and a transmission requirement signal transmitted by the external device in order to transmit corresponding data.

10. The system as claimed in claim 9, wherein the semiconductor optical amplifier performs the optical modulation function when the transmission requirement signal is received, and the semiconductor optical amplifier performs the optical detection function when the transmission requirement signal is not received.

11. The system as claimed in claim 9, wherein the semiconductor optical amplifier performs the optical detection function when the reception requirement signal is received, and the semiconductor optical amplifier performs the optical modulation function when the transmission requirement signal is received.

12. The system as claimed in claim 9, wherein the access point further comprising:

a switch for selectively outputting a signal for providing corresponding command according to communication requirement signals received by the antenna;

a bias control unit for selectively outputting bias current with variable intensity according to whether an output of the signal from the switch exists or not, on the basis of a predetermined threshold current; and

a bias control unit for outputting signals transmitted from the semiconductor optical amplifier to the antenna when a bias current, which is smaller than the predetermined threshold current, is output from the bias control unit, and for outputting signals received by the antenna to the semiconductor optical amplifier when a bias current, which is larger than the predetermined threshold current, is output from the bias control unit.

13. The system as claimed in claim 12, wherein the switch does not output the signal when the communication requirement signal is the reception requirement signal, and the switch outputs the signal when the communication requirement signal is the transmission requirement signal, and

wherein the bias control unit outputs the bias current, which is smaller than the predetermined threshold current, when the signal is not output from the switch, and the bias control unit outputs the bias current, which is larger than the predetermined threshold current, when the signal is outputted from the switch.

14. The optical fiber-based high-speed optical wireless network system as claimed in claim 12, wherein a reverse bias is applied to the semiconductor optical amplifier in order to enable an optical detection function to be performed.

15. A method for an optical fiber-based wireless network, the method comprising the steps of:

receiving a communication requirement signal transmitted from an external device;

selectively converting optical signals into electrical signals and sending the converted electrical signals to an external device, according to the communication requirement signal; and

selectively c onverting signals into optical signals and transmitting the converted optical signals, according to the communication requirement signal.

16. The method as claimed in claim 15, wherein the communication requirement signal includes at least one of reception requirement signal in order to receive corresponding data and transmission requirement signals transmitted by the external device in order to transmit corresponding data.

17. The method as claimed in claim 16, wherein the selectively converting steps include performing an optical modulation function when the transmission requirement signal is received, and performing an optical detection function when the transmission requirement signal is not received.

18. The method as claimed in claim 16, wherein the selectively converting steps include performing an optical detection function when the reception requirement signal is received, and performing an optical modulation function when the transmission requirement signal is received.